

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) Device ~~(100)~~ for centrifuging various samples of a product or a mixture of products which are chemical or biological, which is intended to be positioned on a horizontal working plane ~~(1)~~ **whose including an** available area (S) **that** is less than or equal to about  $0.4 \text{ m}^2$ , in order to cooperate with a laboratory analyzer ~~(2)~~ mounted in proximity to the working plane ~~(1)~~ for automatically performing biological or chemical reactions according to a specific protocol, the external useful height of which centrifuging device ~~(100)~~ is less than or equal to about 20 cm, comprising in a casing ~~(101)~~:

- a vessel ~~(102)~~ which is open at the top and contains a vertical central shaft ~~(103)~~ driven in rotation by a rotary driving means,

- a horizontal plate ~~(104)~~, mounted interlocked in rotation on the central shaft ~~(103)~~ and provided on its surface with a plurality of through orifices ~~(105)~~ for the ~~vertical~~ mounting of tubes ~~(106)~~ which are each intended to contain a volume of a sample to be centrifuged, these **mounting through** orifices having a substantially elongate shape with front and rear walls ~~(105b, 105a)~~ inclined at an acute angle of less than 90 degrees relative to the horizontal, and

- means for indexing the position of the plate ~~(104)~~ each time the plate ~~(104)~~ stops, in order to position said **mounting through** orifices ~~(105)~~ of the tubes ~~(106)~~ at predetermined sites; **wherein**

**the device is adapted to automatically receive tubes from the laboratory analyzer and to automatically permit the laboratory analyzer to retrieve tubes from the laboratory analyzer to perform biological or chemical reactions.**

2. (Currently Amended) Device ~~(100)~~ for centrifuging various samples of a product or a mixture of products which are chemical or biological, which is intended to be positioned on a horizontal working plane ~~(1)~~ **whose including an** available area (S) **that** is less than or equal to about  $0.4 \text{ m}^2$ , in order to cooperate with a laboratory analyzer ~~(2)~~ mounted in proximity to the working plane ~~(1)~~ for automatically performing biological or chemical reactions according

to a predetermined protocol, the external useful height of which centrifuging device ~~(100)~~ is less than or equal to about 20 cm, comprising in a casing ~~(101)~~:

- a vessel ~~(102)~~ which is open at the top and contains a vertical central shaft ~~(103)~~ driven in rotation by a rotary driving means,
- a horizontal plate ~~(104)~~, mounted interlocked in rotation on the central shaft ~~(103)~~ and provided with arrangements for ~~the~~ parallel mounting, in proximity to each other, of two swing trays ~~(107, 108)~~ for supporting two sample-receptacle holders ~~(107a, 108a)~~ which can pivot freely about a horizontal axis in order to assume a horizontally inclined position during the rotation of the plate, and
- means for indexing the position of the plate ~~(104)~~ each time the plate stops, in order to position said swing trays ~~(107, 108)~~ at predetermined sites; wherein the horizontal plate is provided with through orifices that extend from the bottom of the horizontal plate to the top of the horizontal plate adapted for the mounting of tubes; and wherein the device is adapted to automatically receive tubes from the laboratory analyzer and to automatically permit the laboratory analyzer to retrieve tubes from the laboratory analyzer to perform biological or chemical reactions.

3. (Currently amended) Device according to Claim 1, ~~characterized in that it has~~ wherein the device includes two identical vessels ~~(102, 102')~~ containing two identical plates ~~(104, 104')~~ which are linked in rotation and are driven simultaneously by a rotary driving means.

4. (Currently amended) Device ~~according to Claim 1, characterized in that it has~~ for centrifuging various samples of a product or a mixture of products which are chemical or biological, which is intended to be positioned on a horizontal working plane including an available area (S) that is less than or equal to about 0.4 m<sup>2</sup>, in order to cooperate with a laboratory analyzer mounted in proximity to the working plane for automatically performing biological or chemical reactions according to a specific protocol, the external useful height of which centrifuging device is less than or equal to about 20 cm, comprising in a casing;

- a vessel which is open at the top and contains a vertical central shaft driven in rotation by a rotary driving means,

- a horizontal plate, mounted interlocked in rotation on the central shaft and provided on its surface with a plurality of through orifices for the mounting of tubes which are each intended to contain a volume of a sample to be centrifuged, these through orifices having a substantially elongate shape with front and rear walls inclined at an acute angle of less than 90 degrees relative to the horizontal, and

- means for indexing the position of the plate each time the plate stops, in order to position said through orifices of the tubes at predetermined sites; wherein the horizontal plate (104) is provided with arrangements for the parallel mounting of pivoting swing trays (107, 108) which support microplates (107a, 108a).

5. (Cancelled)

6. (Currently amended) Device according to Claim 1, ~~characterized in that it has~~ wherein the rear and front walls (105a, 105b) of the ~~mounting through~~ orifices (105) of the plate (104) are inclined by an angle of less than or equal to 60 degrees relative to the horizontal.

7. (Currently amended) Device according to Claim 1, ~~characterized in that it has~~ wherein the indexing means (120) of each plate (104, 104') comprise a disk (123) which is mounted below each plate (104, 104') so as to be interlocked in rotation with the vertical ~~drive central~~ shaft (103) and is provided with a recess (124) provided in its outer peripheral edge (125), a horizontal finger (126) which is held in contact with the disk by an elastic means (127) when the plate is stopped and when it is being indexed and is separated from the disk by an actuator when the plate is rotating in the centrifuging phase, and means for pivoting the plate stepwise in the indexing phase until said finger cooperates with the recess (124) of the disk (123).

8. (Currently amended) Device ~~according to Claim 1, characterized in that it has for~~ centrifuging various samples of a product or a mixture of products which are chemical or biological, which is intended to be positioned on a horizontal working plane including an available area (S) that is less than or equal to about 0.4 m<sup>2</sup>, in order to cooperate with a laboratory analyzer mounted in proximity to the working plane for automatically performing biological or chemical reactions according to a specific protocol, the external useful height of which centrifuging device is less than or equal to about 20 cm, comprising in a casing:

- a vessel which is open at the top and contains a vertical central shaft driven in rotation by a rotary driving means,

- a horizontal plate, mounted interlocked in rotation on the central shaft and provided on its surface with a plurality of through orifices for the mounting of tubes which are each intended to contain a volume of a sample to be centrifuged, these through orifices having a substantially elongate shape with front and rear walls inclined at an acute angle of less than 90 degrees relative to the horizontal, and

- means for indexing the position of the plate each time the plate stops, in order to position said through orifices of the tubes at predetermined sites; wherein ~~characterized in that it has~~ wherein the device includes a lid (109) which closes the vessel(s) (102) and is mounted so as to pivot on the casing (101).

9. (Currently amended) Device according to claim 1, ~~characterized in that it has~~ wherein the device includes a lid (109) which closes the vessel(s) (102, 102') and is mounted so as to slide on the casing (101), and in that said indexing means comprise a rack (121) of specific length which is provided on the inner face of the closure lid (109) and is intended to cooperate with a toothed-sector wheel (122) carried by the drive shaft of a plate (104), when opening the vessel (s) (102) by sliding said lid (109).

10. (Currently amended) Device according to claim 1, ~~characterized in that it has~~ wherein the size of the ~~mounting through~~ orifices (105, 105') of each plate (104, 104') is designed to hold tubes with a volume equal to about 2 ml.

11. (Currently amended) Device according to claim 1, ~~characterized in that it has~~ **wherein** the maximum rotational speed of each plate ~~(104, 104')~~ is ~~of the order of~~ **about** 13,000 revolutions/minute.
12. (Currently amended) Device according to claim 1, ~~characterized in that it has~~ **wherein** the size of the ~~mounting through~~ orifices ~~(105)~~ of the plate ~~(104)~~ is designed to hold tubes with a volume equal to about 5 ml.
13. (Currently amended) Device according to claim 2, ~~characterized in that it has~~ **wherein** the maximum rotational speed of the plate ~~(104)~~ is ~~of the order of~~ **about** 4500 revolutions/minute.
14. (Currently amended) Device according to claim 1, ~~characterized in that it has~~ **wherein** the maximum rotational speed of the plate ~~(104)~~ is ~~of the order of~~ **about** 5000 revolutions/minute.
15. (Currently amended) Device according to claim 1, ~~characterized in that it has~~ **wherein** the vessel ~~(102)~~ in the shape of a cylinder ~~of revolution~~ has a diameter of the order of 300 millimeters and a height of the order of 85 millimeters, for a horizontal plate ~~(104)~~ with a diameter of the order of 270 millimeters, the casing ~~(101)~~ enclosing the vessel ~~(102)~~ having an external width and length ~~of the order of~~ **about** 320 millimeters and a height ~~of the order of~~ **about** of 120 millimeters.
16. (Currently amended) Device according to claim 1, ~~characterized in that it has~~ **wherein** the ~~mounting through~~ orifices ~~(105)~~ have an oblong shape.
17. (Currently amended) Device according to claim 1, ~~characterized in that it has~~ **wherein** the horizontal plate ~~(104)~~ has about 48 ~~mounting through~~ orifices ~~(105)~~ for mounting about 48 tubes ~~(106)~~.

18. (Currently amended) Device ~~according to Claim 1, characterized in that it has~~ for centrifuging various samples of a product or a mixture of products which are chemical or biological, which is intended to be positioned on a horizontal working plane including an available area (S) that is less than or equal to about 0.4 m<sup>2</sup>, in order to cooperate with a laboratory analyzer mounted in proximity to the working plane for automatically performing biological or chemical reactions according to a specific protocol, the external useful height of which centrifuging device is less than or equal to about 20 cm, comprising in a casing:

- a vessel which is open at the top and contains a vertical central shaft driven in rotation by a rotary driving means,

- a horizontal plate, mounted interlocked in rotation on the central shaft and provided on its surface with a plurality of through orifices for the mounting of tubes which are each intended to contain a volume of a sample to be centrifuged, these through orifices having a substantially elongate shape with front and rear walls inclined at an acute angle of less than 90 degrees relative to the horizontal, and

- means for indexing the position of the plate each time the plate stops, in order to position said through orifices of the tubes at predetermined sites; wherein ~~characterized in that it has~~ wherein the plate is made of metallic material, ~~preferably a low-density material, such as a high-strength aluminum alloy covered with chemical nickel plating.~~

19. (Currently amended) Device according to claim 2, ~~characterized in that it has~~ wherein the swing trays are made of metallic material, ~~preferably high-strength inox®.~~

20. (Currently amended) Device according to claim 2, ~~characterized in that it has~~ wherein the swing trays are made of a composite material ~~such as carbon.~~

21. (New) Device according to claim 1, wherein the plate is made of a high-strength aluminum alloy covered with chemical nickel plating.

22. (New) Device according to claim 2, wherein the swing trays are made of high-strength metallic material.

23. (New) Device according to claim 2, wherein the swing trays are made of a composite material, the composite material including carbon.

24. (New) Device for centrifuging various samples of a product or a mixture of products which are chemical or biological, which is intended to be positioned on a horizontal working plane including an available area (S) that is less than or equal to about  $0.4 \text{ m}^2$ , in order to cooperate with a laboratory analyzer -mounted in proximity to the working plane for automatically performing biological or chemical reactions according to a specific protocol, the external useful height of which centrifuging device is less than or equal to about 20 cm, comprising in a casing:

- a vessel which is open at the top and contains a vertical central shaft driven in rotation by a rotary driving means,
- a horizontal plate, mounted interlocked in rotation on the central shaft and provided on its surface with a plurality of through orifices for the mounting of tubes which are each intended to contain a volume of a sample to be centrifuged, these through orifices having a substantially elongate shape with front and rear walls inclined at an acute angle of less than 90 degrees relative to the horizontal, and
- a rotation indexer adapted to index the position of the plate each time the plate stops, in order to position said through orifices of the tubes at predetermined sites; wherein the device is adapted to automatically receive tubes from the laboratory analyzer and to automatically permit the laboratory analyzer to retrieve tubes from the laboratory analyzer to perform biological or chemical reactions.

25. (New) Device for centrifuging various samples of a product or a mixture of products which are chemical or biological, which is intended to be positioned on a horizontal working plane in order to cooperate with a laboratory analyzer mounted in proximity to the working plane for automatically performing biological or chemical reactions according to a predetermined protocol, the device comprising in a casing:

- a vessel which is open at the top and contains a vertical central shaft driven in rotation by a rotary driving means,
- a horizontal plate, mounted interlocked in rotation on the central shaft and provided with arrangements for the parallel mounting, in proximity to each other, of two swing trays for supporting two sample-receptacle holders which can pivot freely about a horizontal axis in order to assume a horizontally inclined position during the rotation of the plate, and
- means for indexing the position of the plate each time the plate stops, in order to position said swing trays at predetermined sites; the plate having two diametrically opposite notches in which the swing trays are mounted so as to pivot; wherein the centrifuging device has an external useful height which is less than or equal to about 20 cm and the working plane on which it is intended to be positioned has an available area (S) of less than or equal to about 0.4 m<sup>2</sup>; and wherein the swing trays are mounted in the notches in such a way that the pivoting axis of said swing trays is offset toward the center of the plate relative to the vertical axis passing through the center of gravity of each swing tray.

26. (New) Device according to claim 25, wherein the horizontal plate is provided with through orifices that extend from the bottom of the horizontal plate to the top of the horizontal plate adapted for the mounting of tubes; and wherein the device is adapted to automatically receive tubes from the laboratory analyzer and to automatically permit the laboratory analyzer to retrieve tubes from the laboratory analyzer to perform biological or chemical reactions.

27. (New) Device according to claim 25, wherein the device is adapted to automatically receive tubes from the laboratory analyzer and to automatically permit the laboratory analyzer to retrieve tubes from the laboratory analyzer to perform biological or chemical reactions.